

FIG. 1

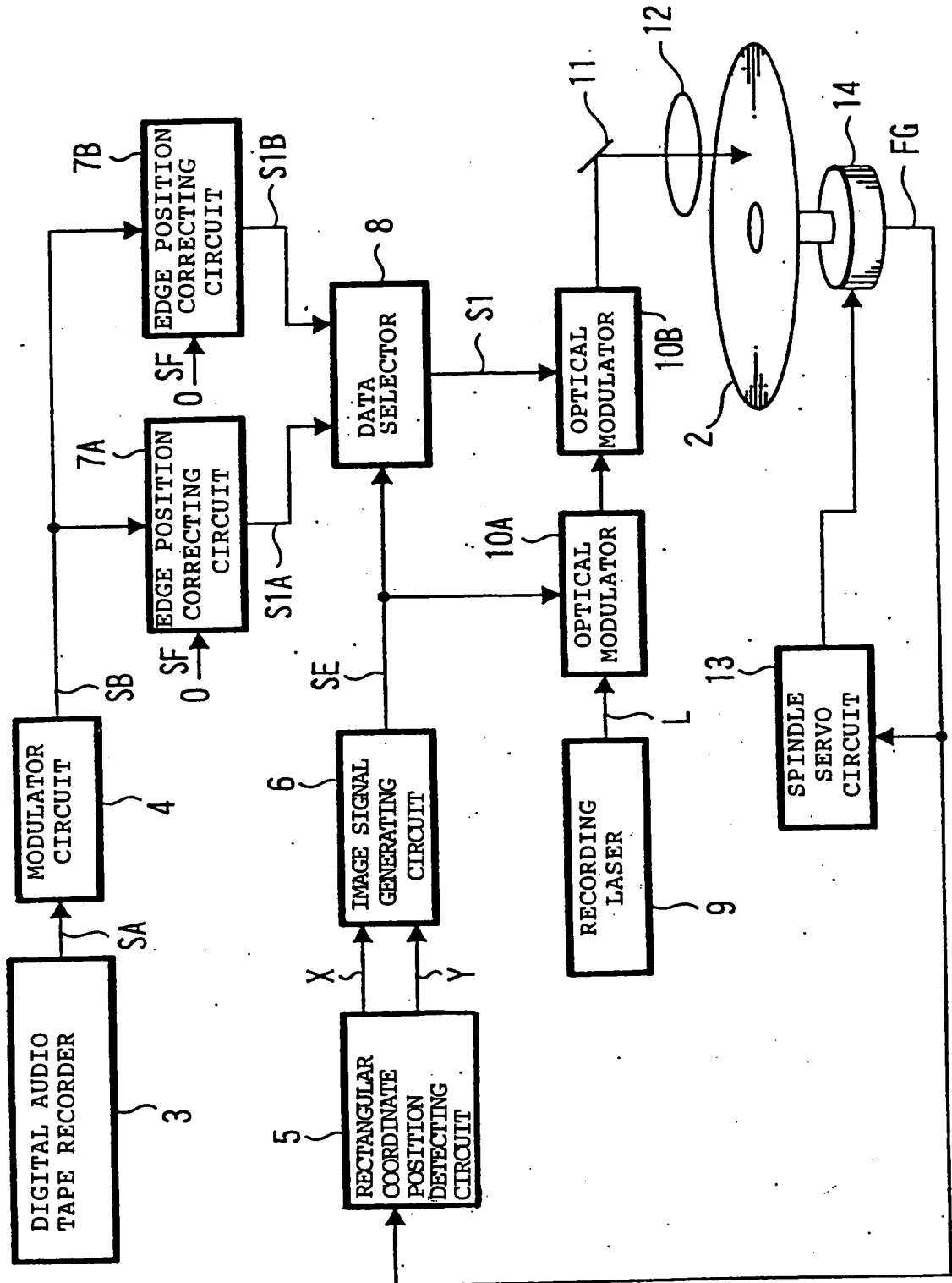


FIG. 2

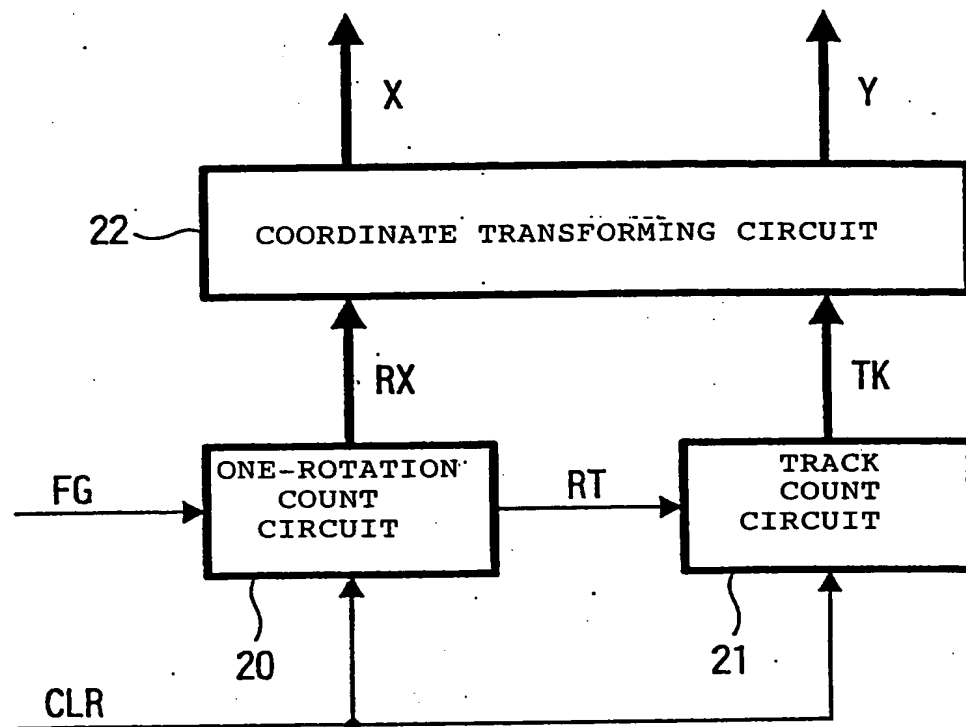


FIG. 3

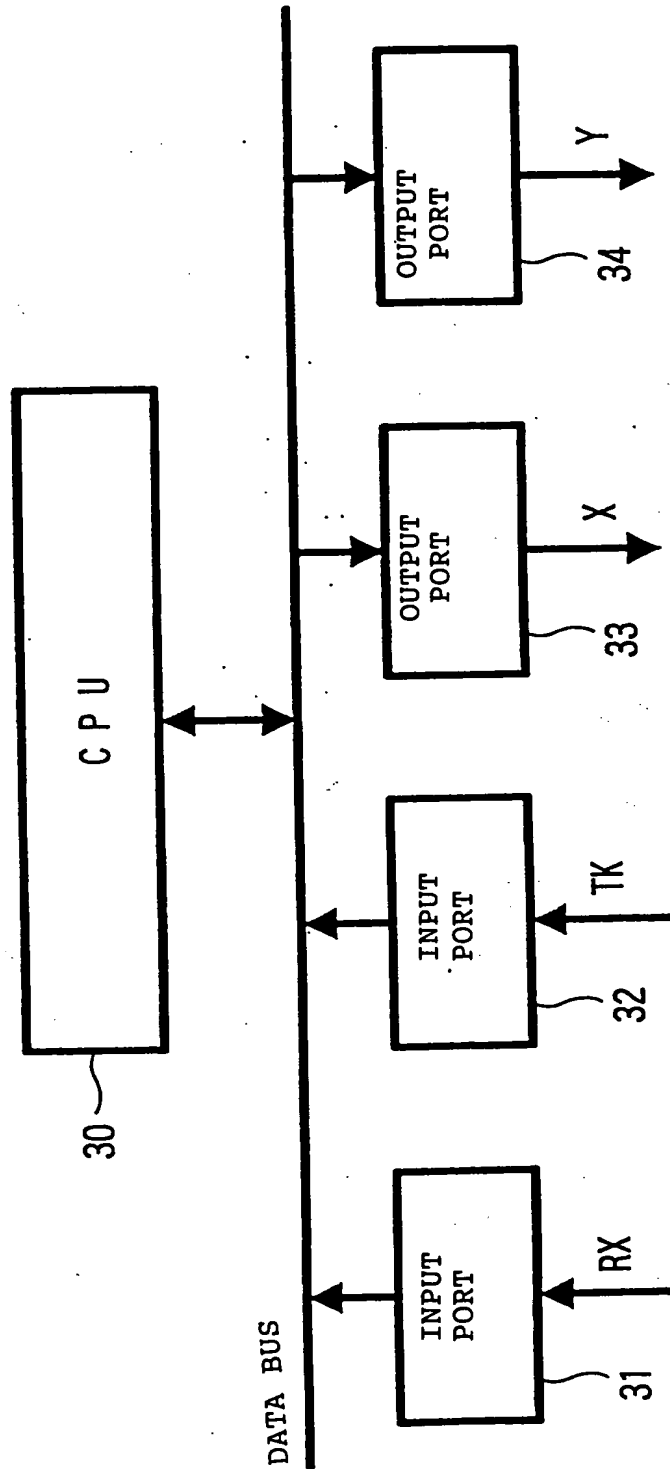
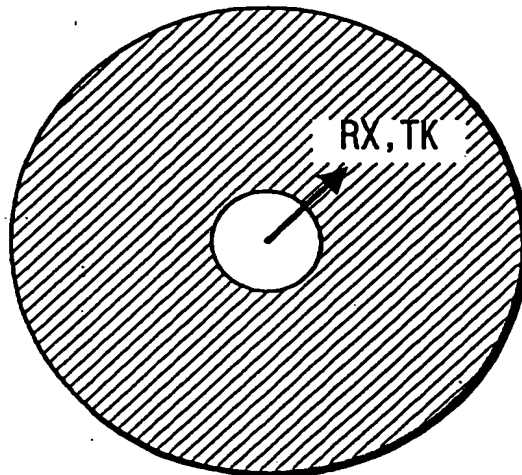
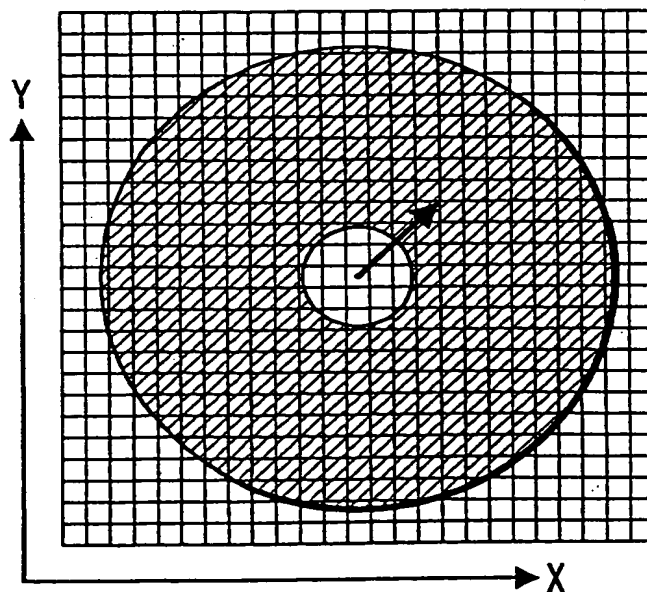


FIG. 4A



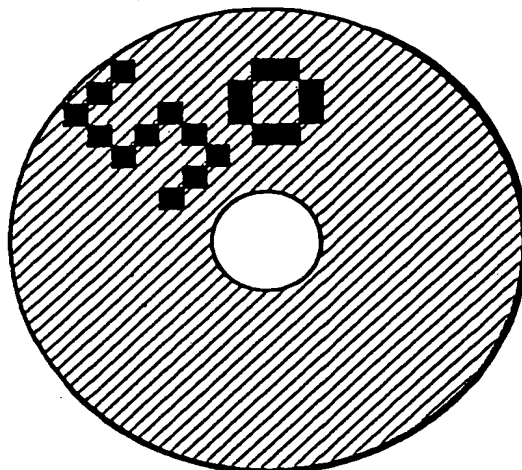
POSITIONAL INFORMATION ON
POLAR COORDIATE SYSTEM

FIG. 4B



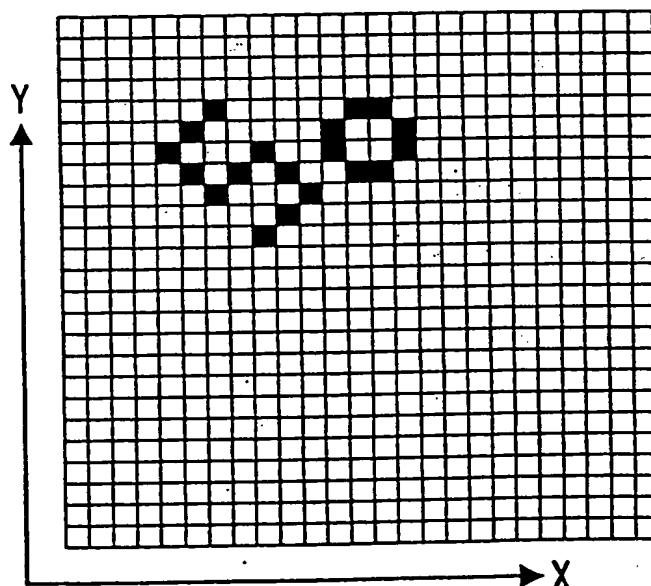
POSITIONAL INFORMATION ON
RECTANGULAR COORDINATE SYSTEM

FIG. 5A



PATTERN TO BE DRAWN ON DISK

FIG. 5B



PATTERN RECORDED IN INTERNAL MEMORY
OF CHARACTER SIGNAL GENERATING CIRCUIT

FIG. 6

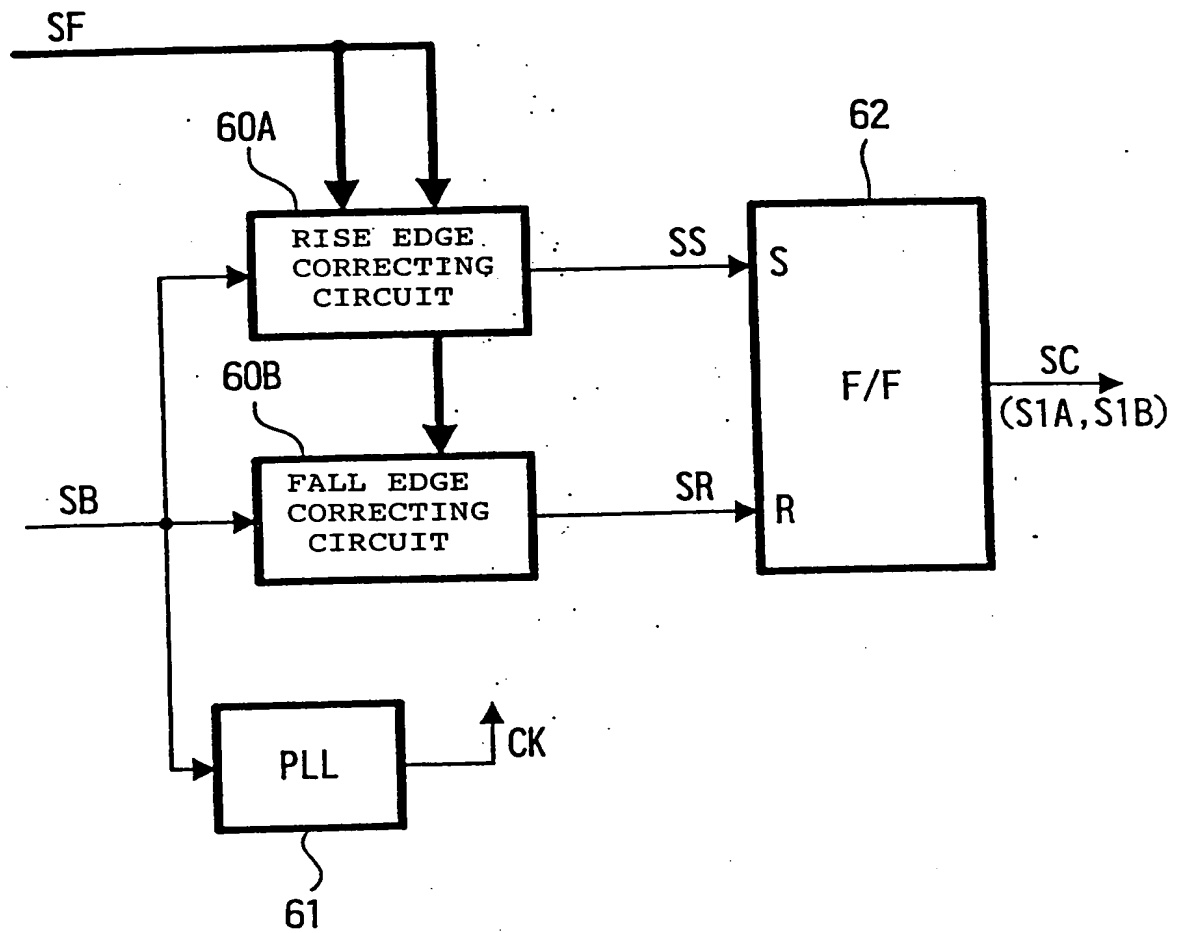


FIG. 7

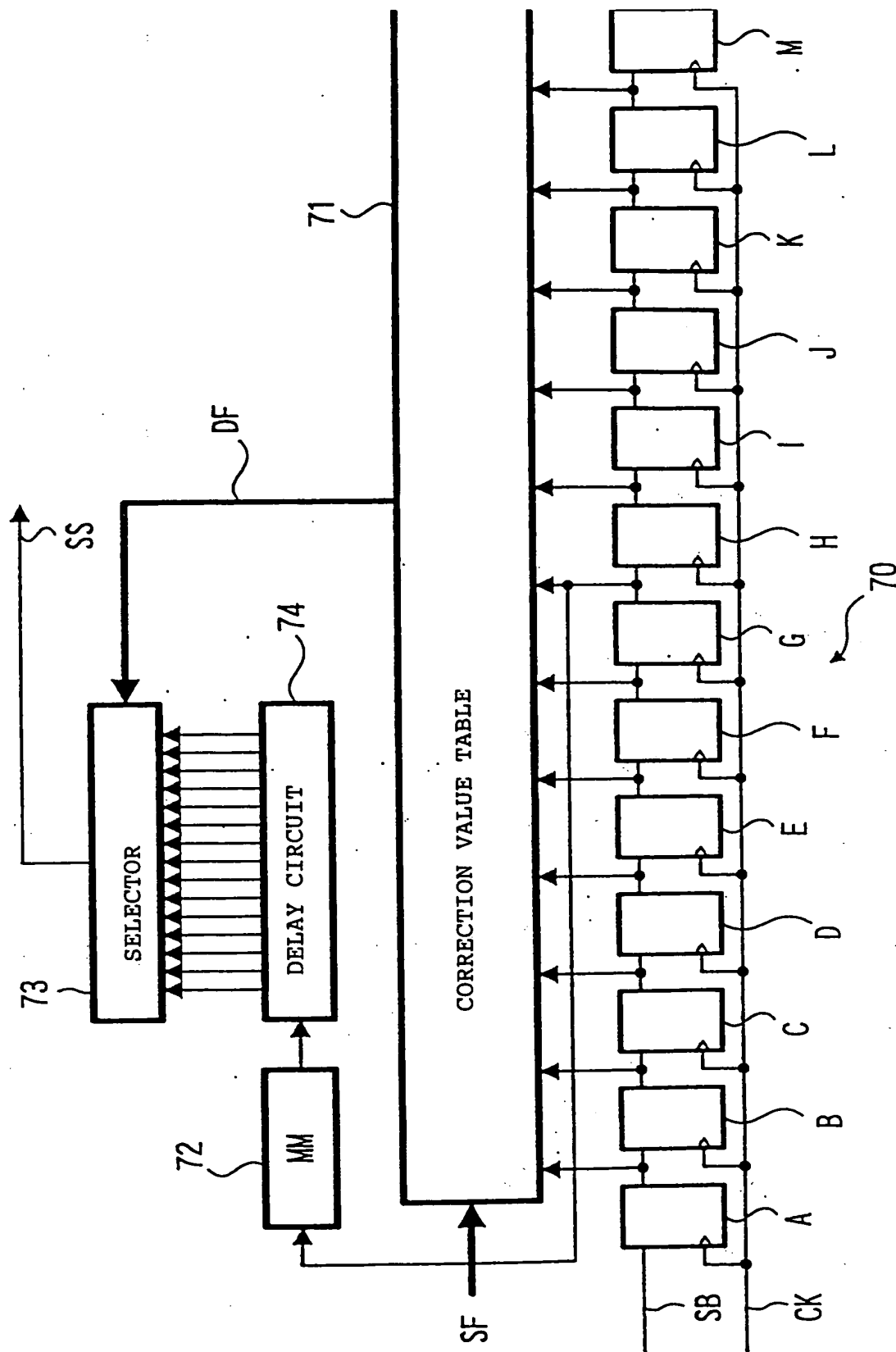


FIG. 8

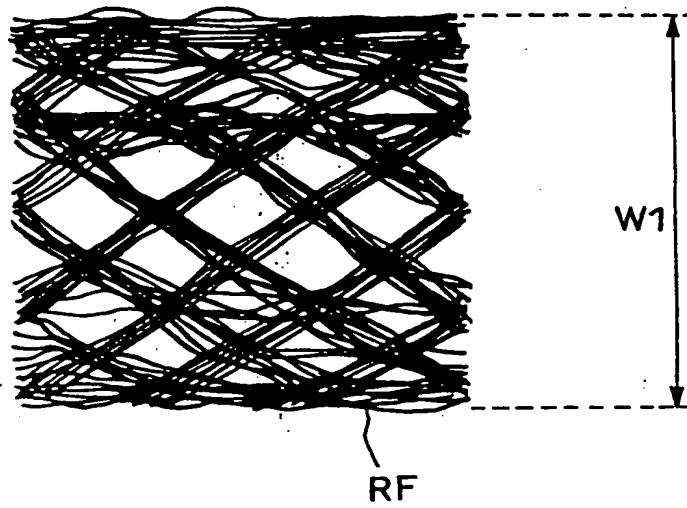


FIG. 9

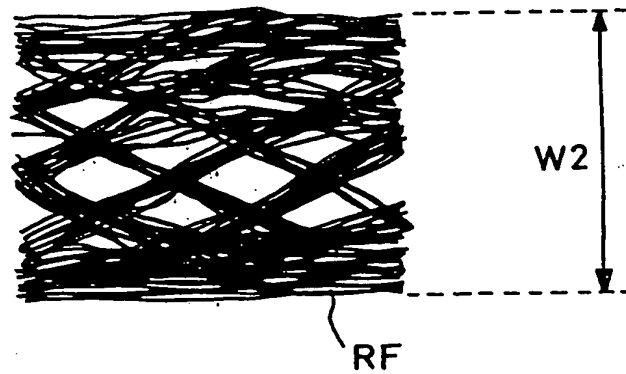


FIG. 10

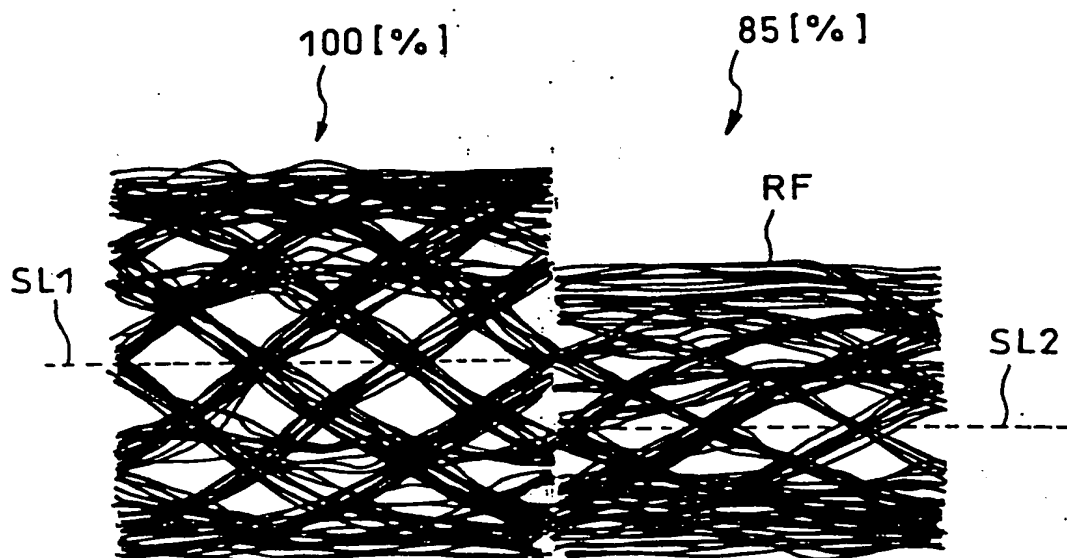
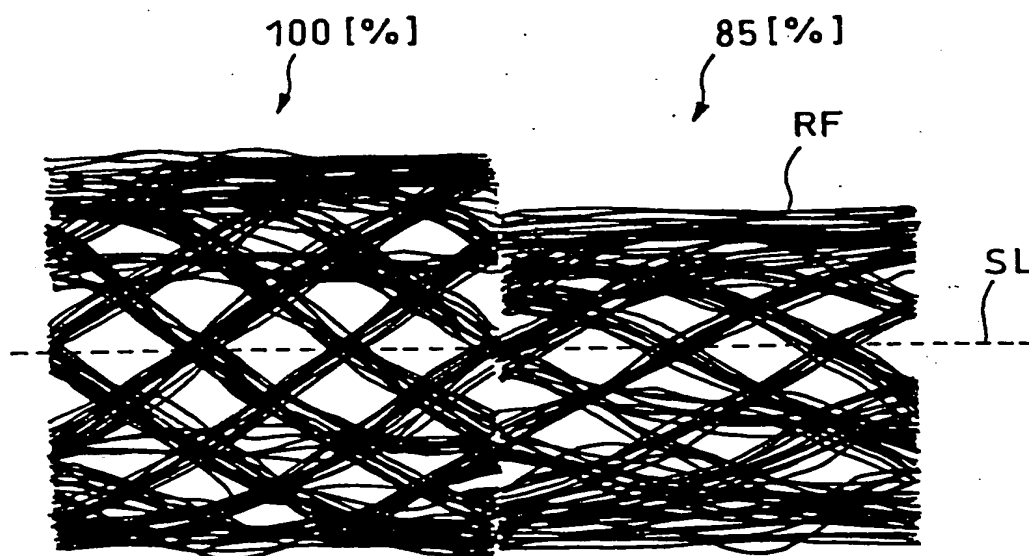


FIG. 11



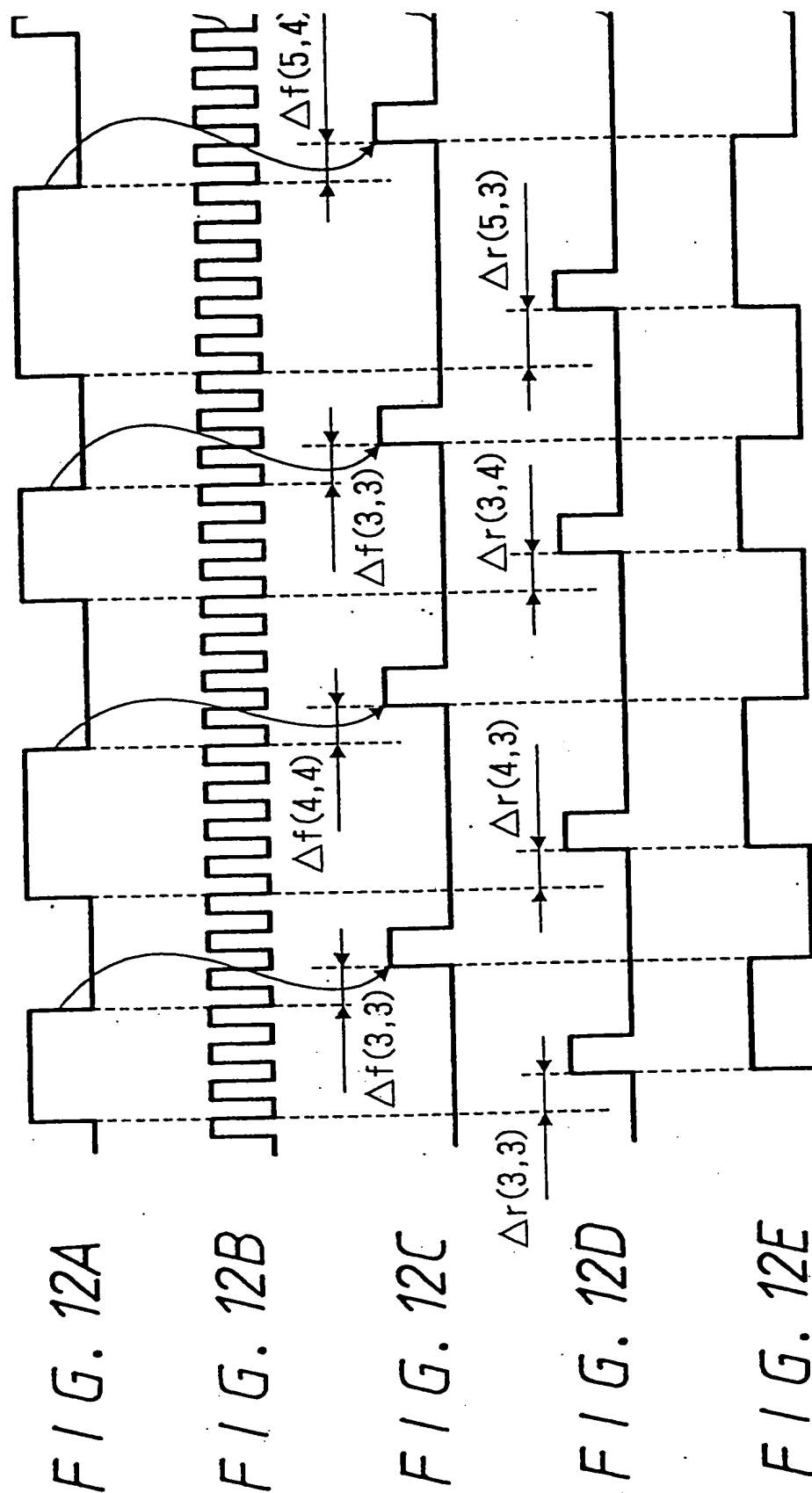


FIG. 13

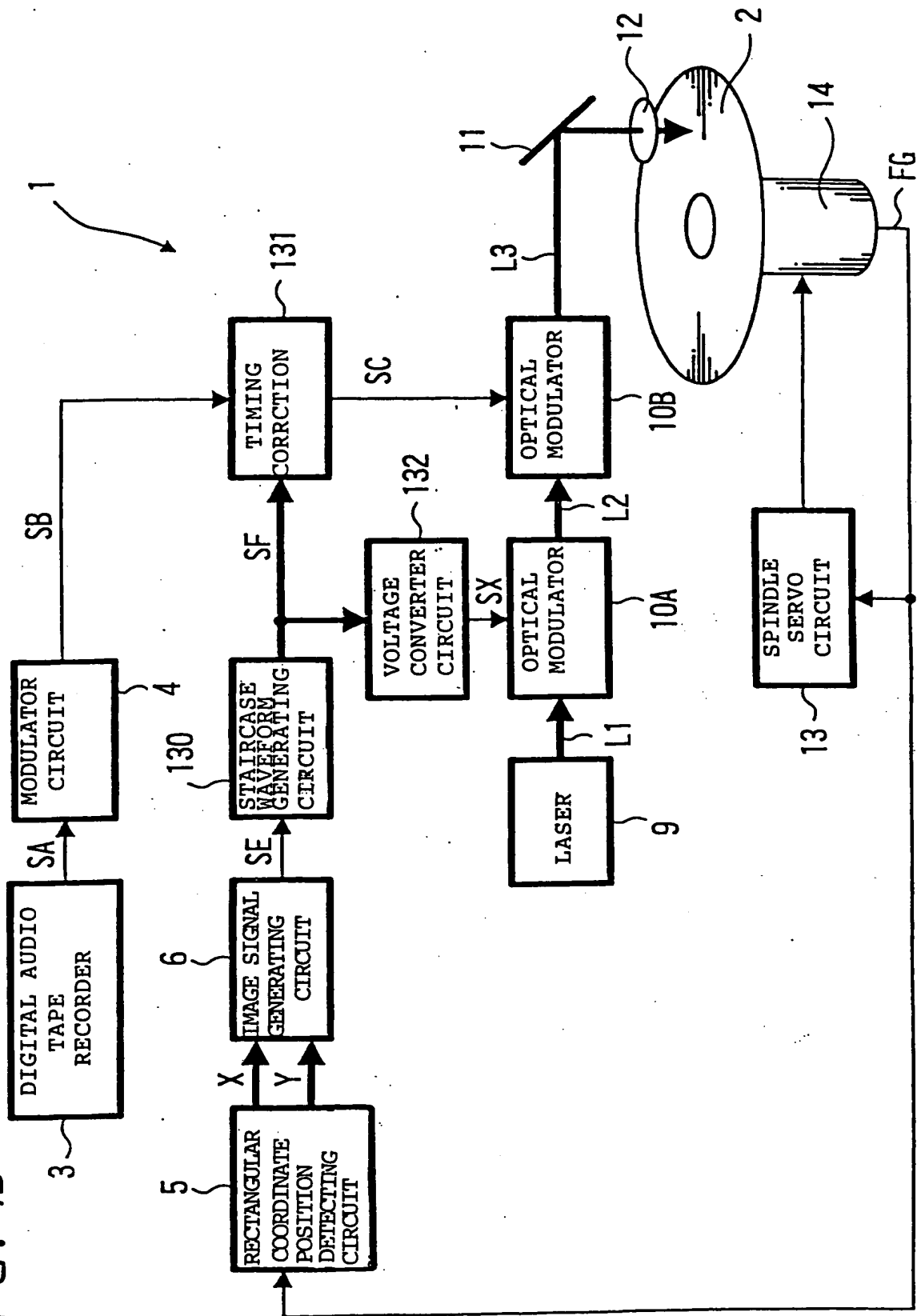


FIG. 14

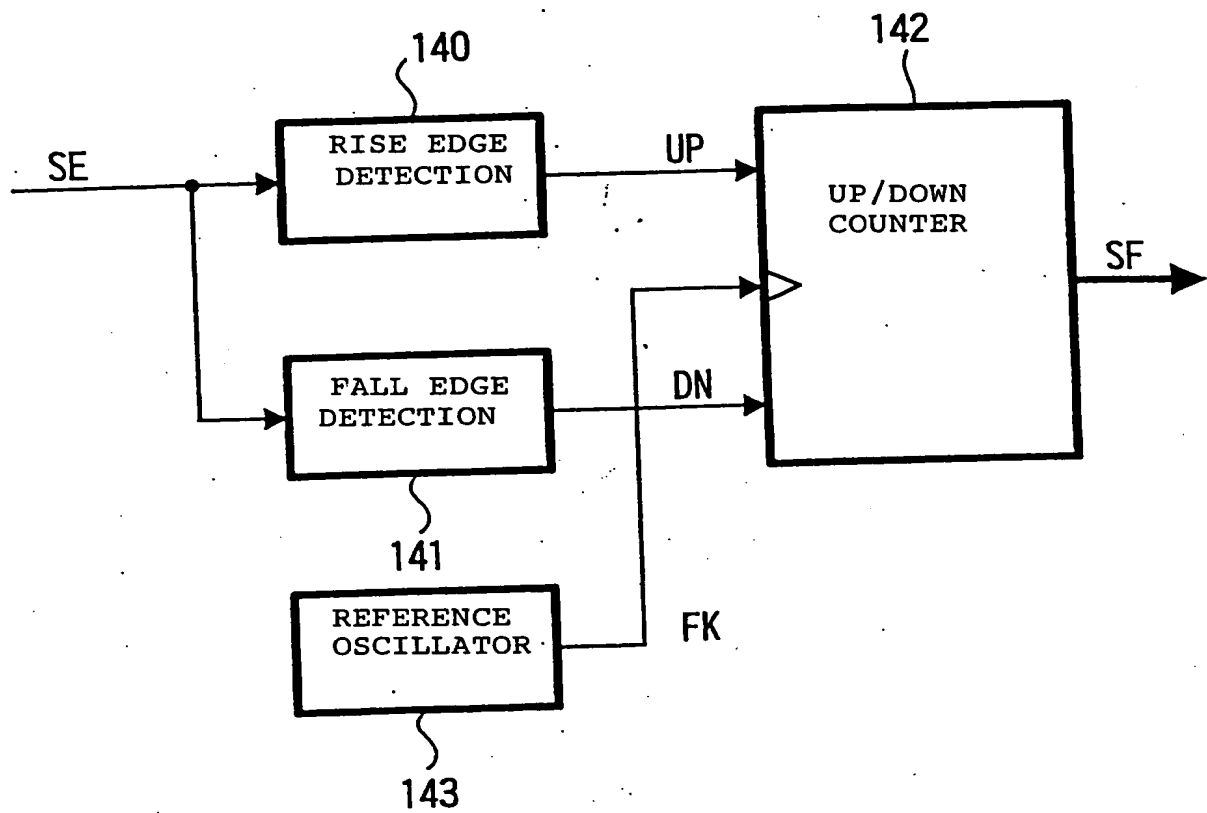


FIG. 15A SE

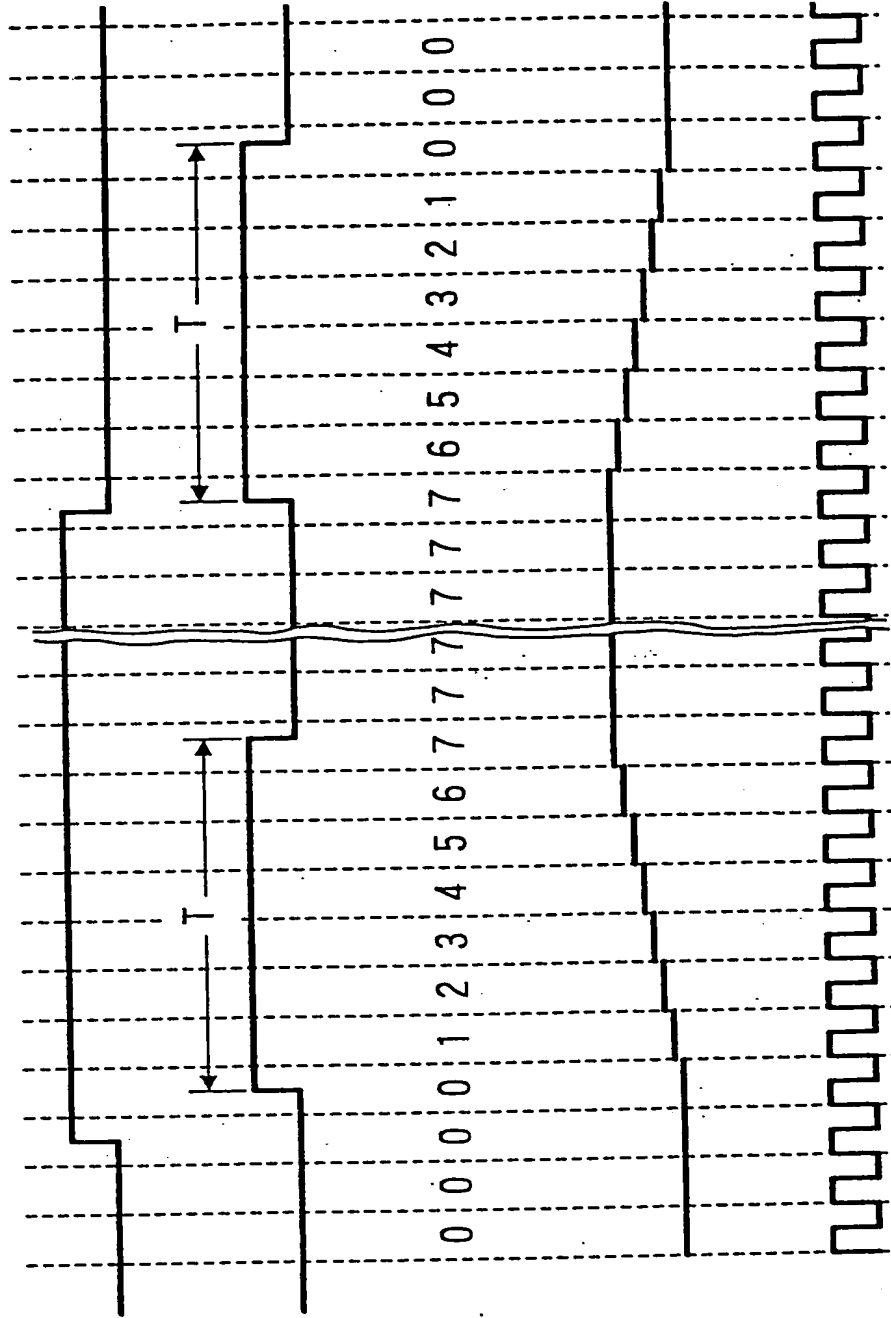


FIG. 15B UP
DN

FIG. 15C SF

FIG. 15D SX

FIG. 15E FK

FIG. 16

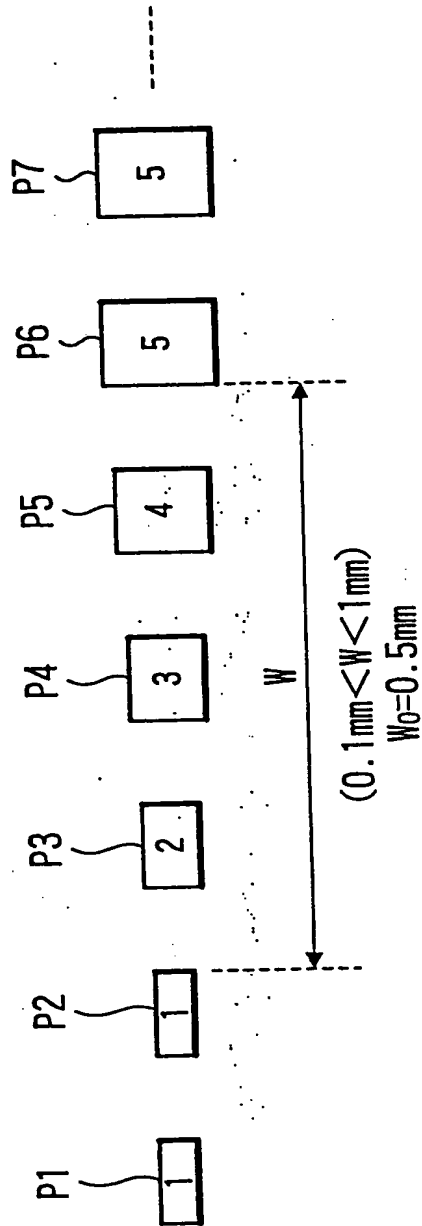


FIG. 17

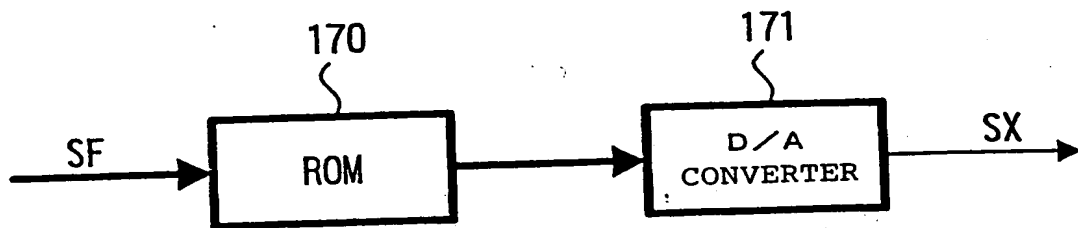


FIG. 18

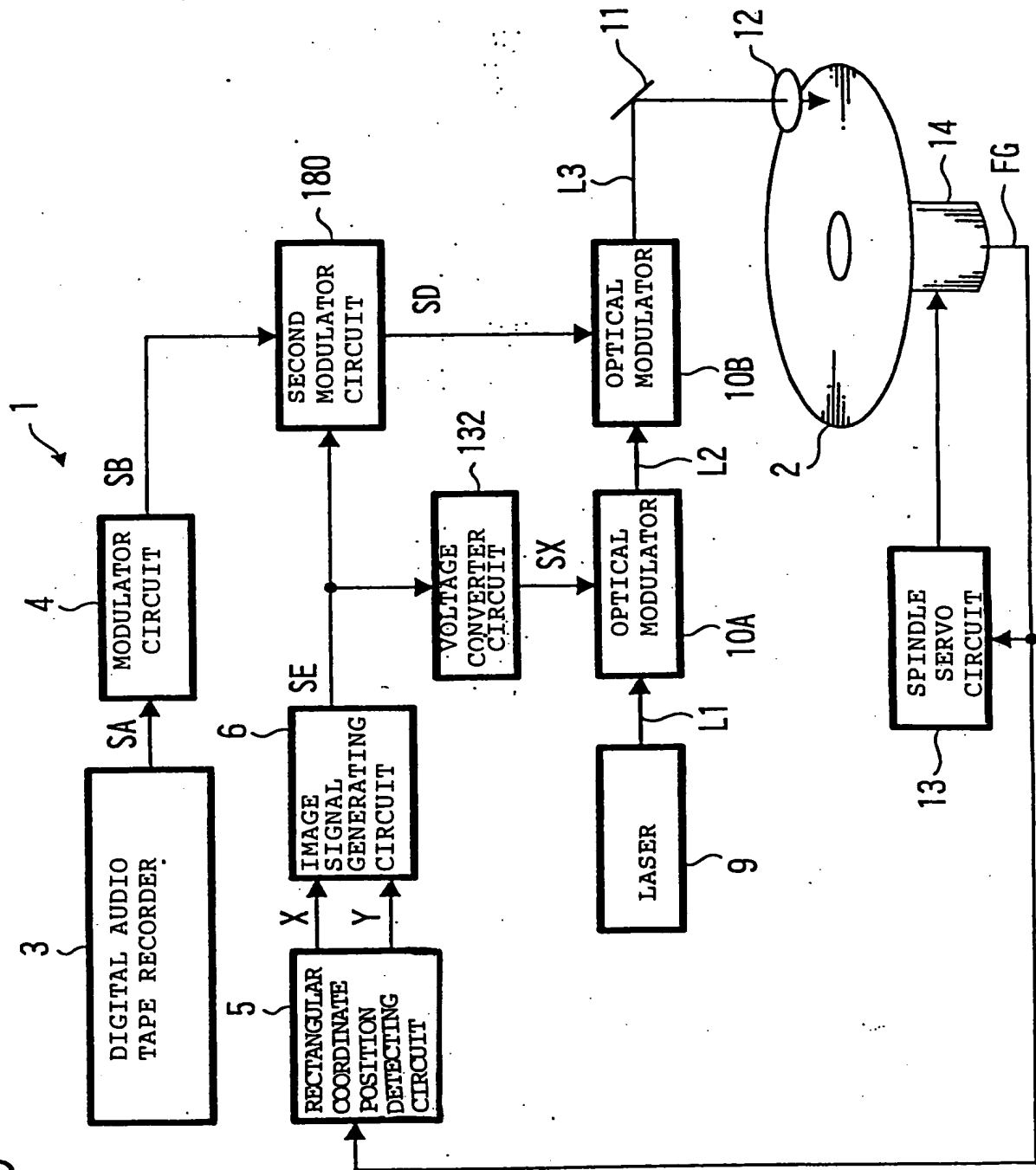


FIG. 19

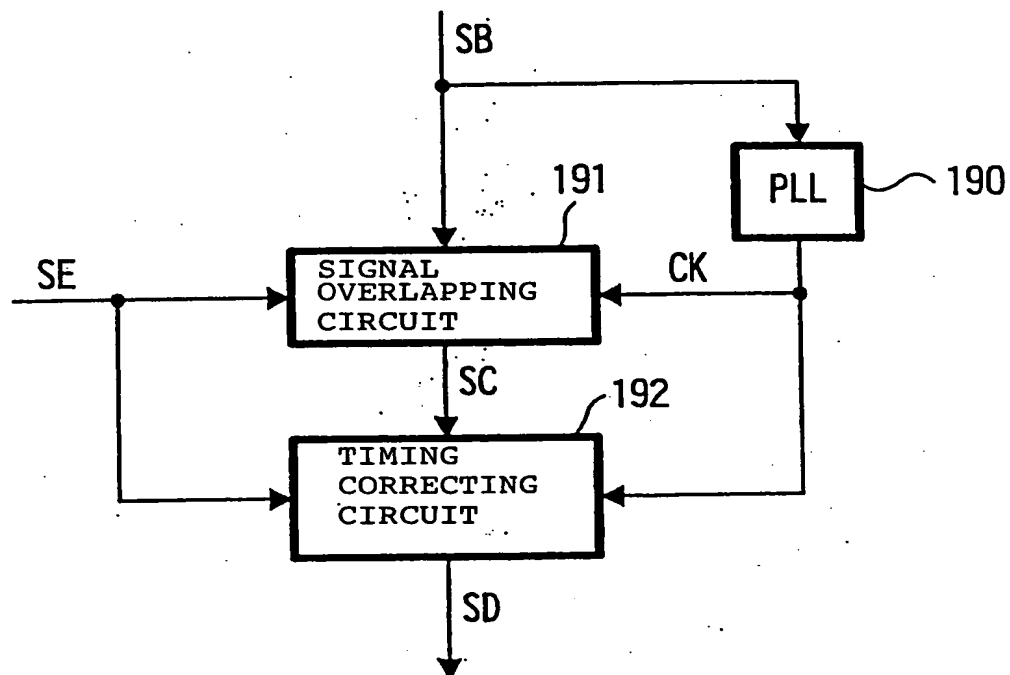


FIG. 20

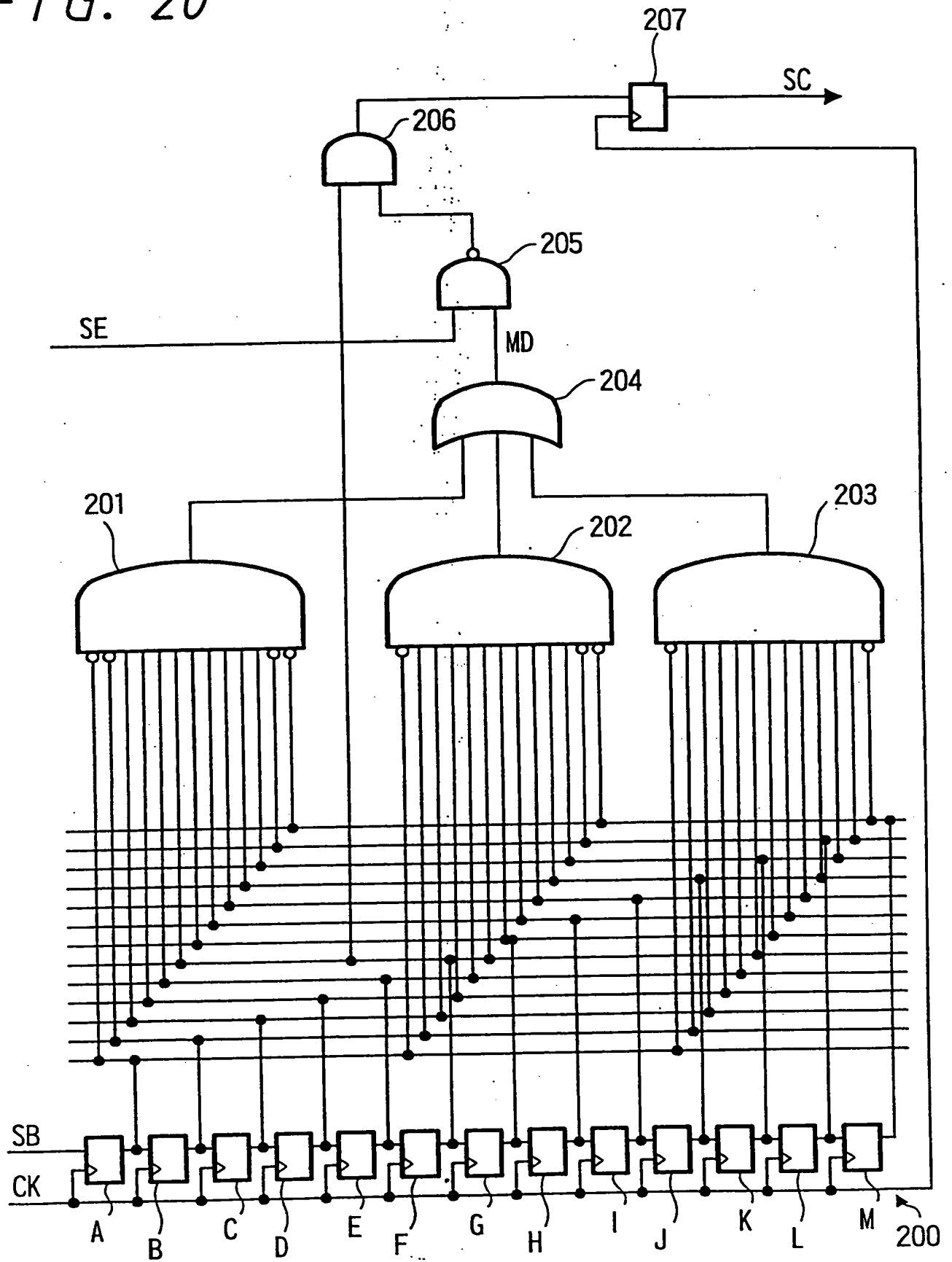


FIG. 21A

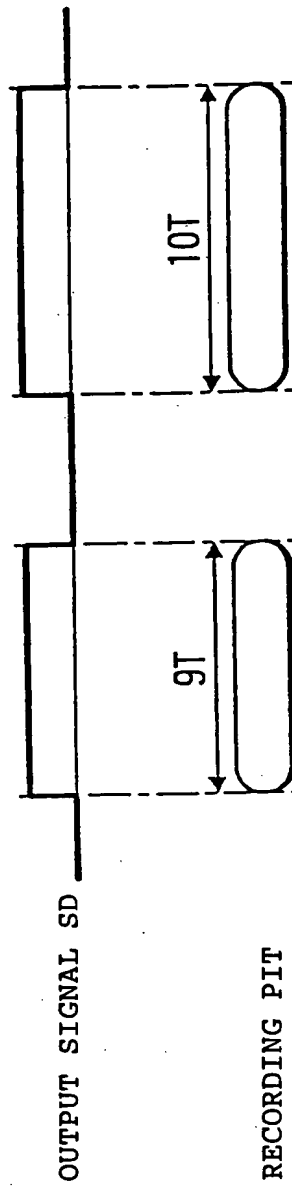


FIG. 21B

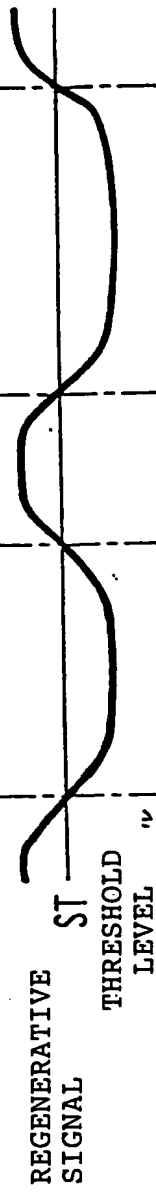


FIG. 21C



FIG. 21D

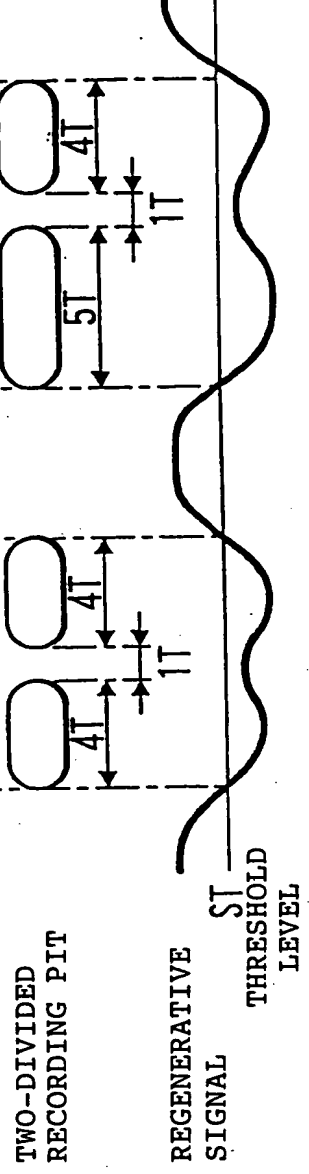
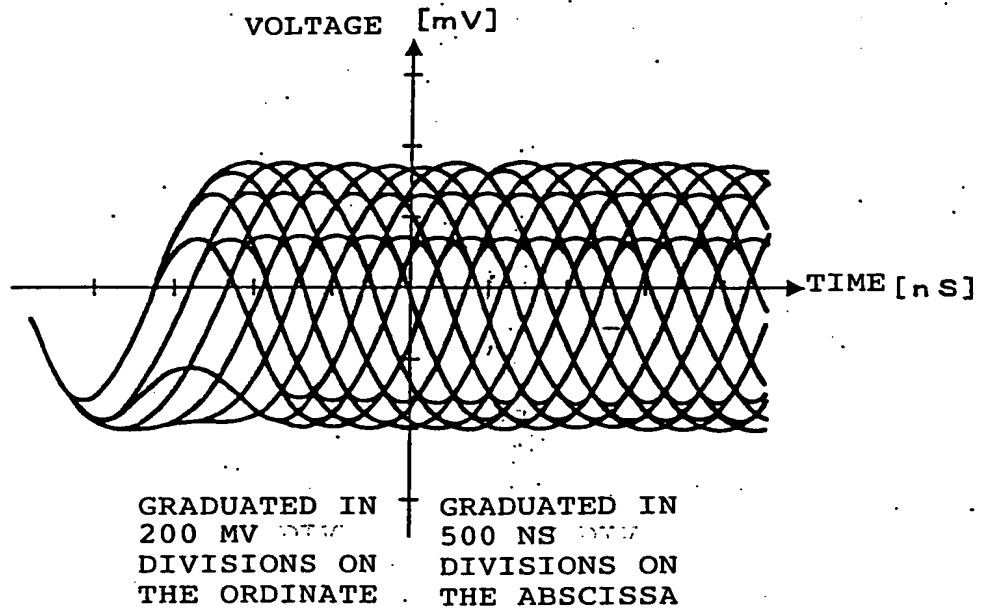


FIG. 21E

FIG. 21F

FIG. 22



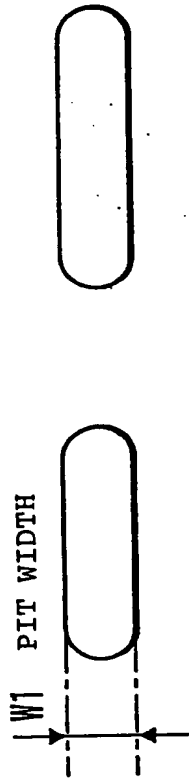


FIG. 23A USUAL RECORDING PIT

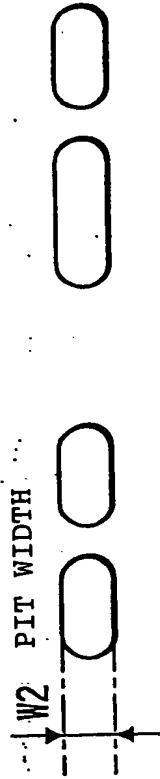


FIG. 23B TWO-DIVIDED RECORDING PIT

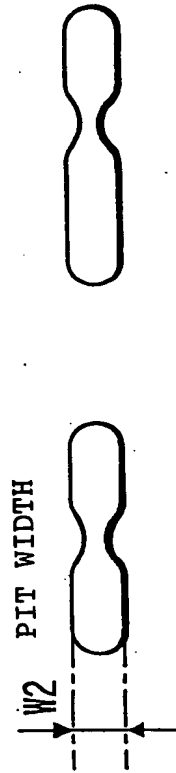


FIG. 23C REPRESSED RECORDING PIT

FIG. 24

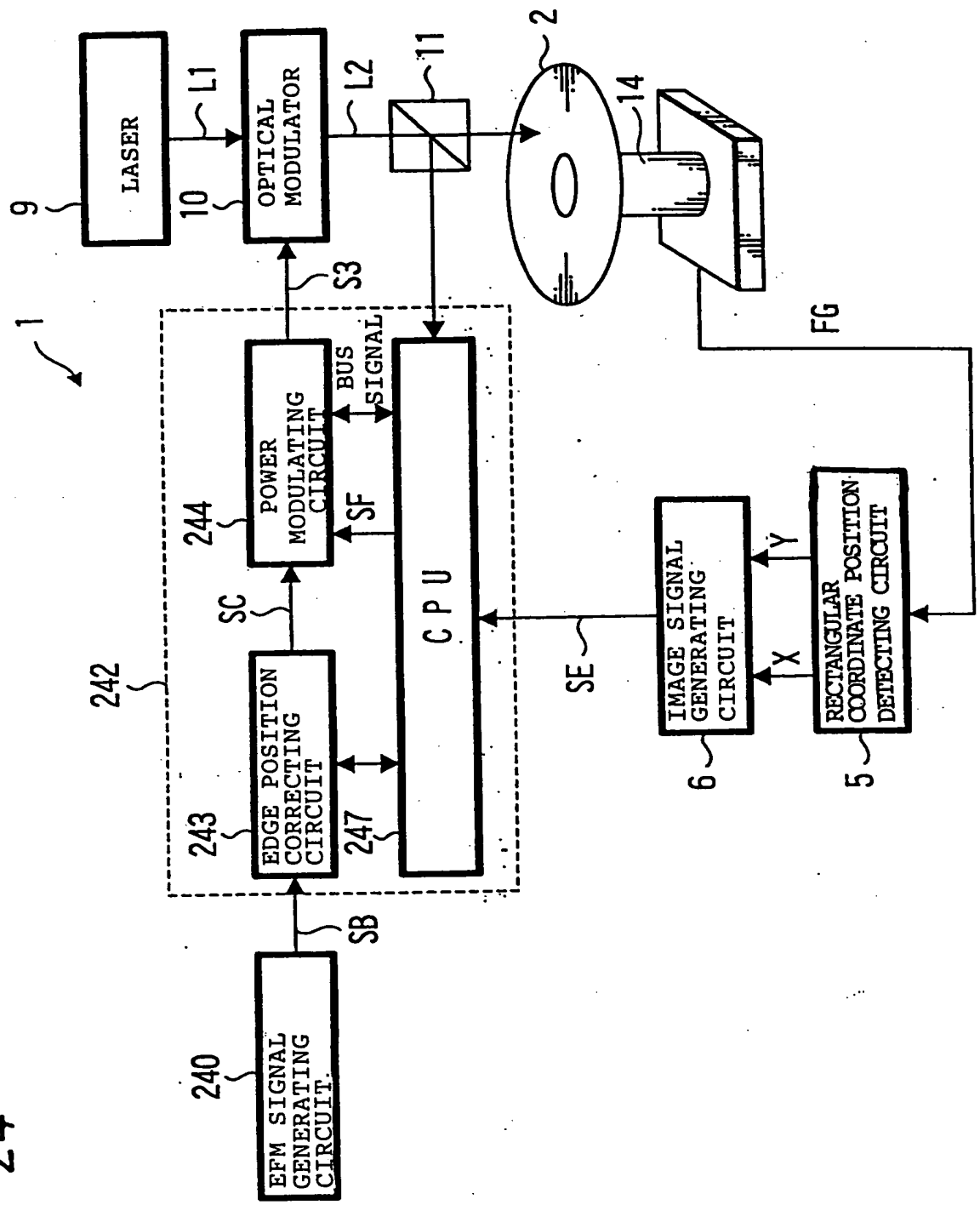


FIG. 25

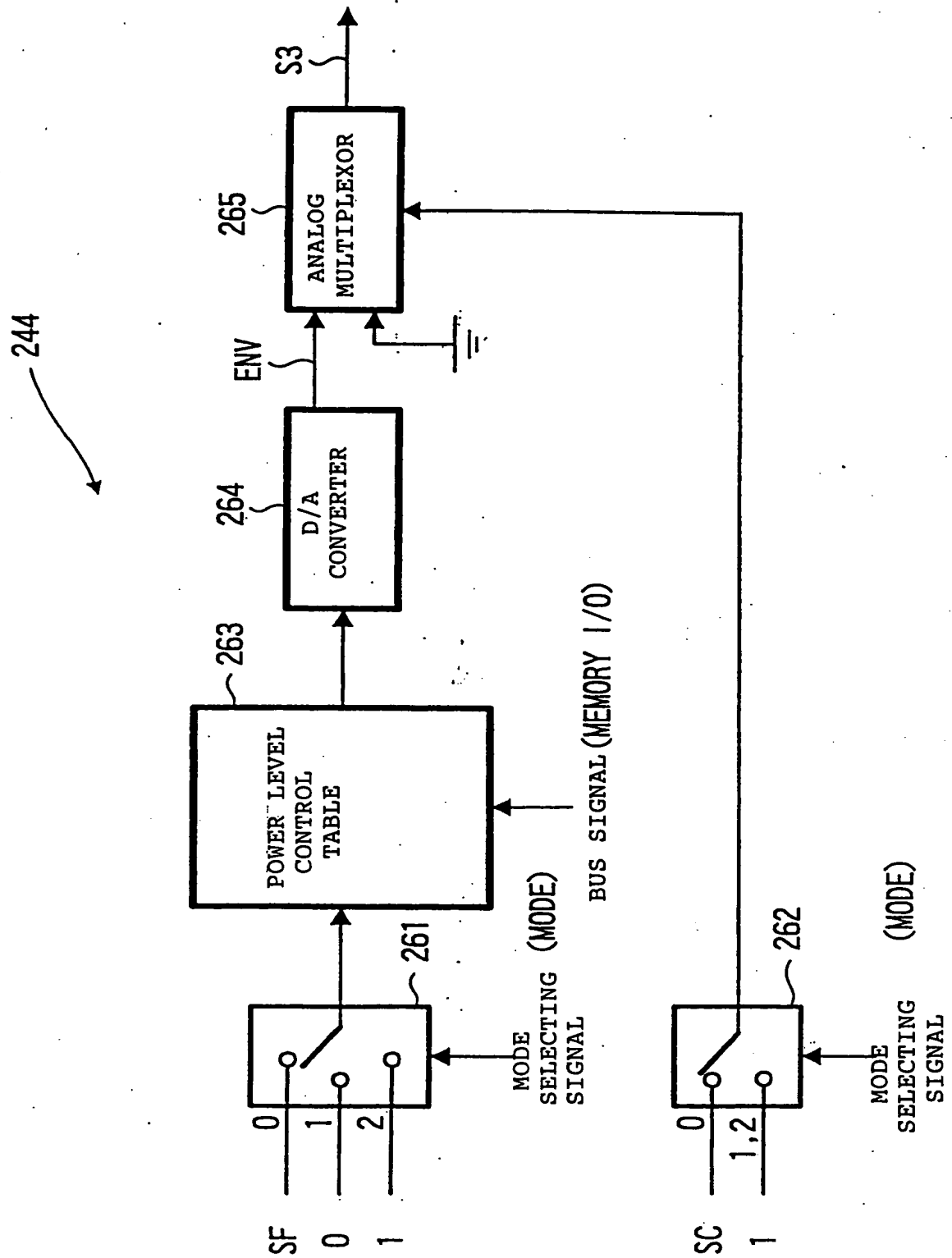
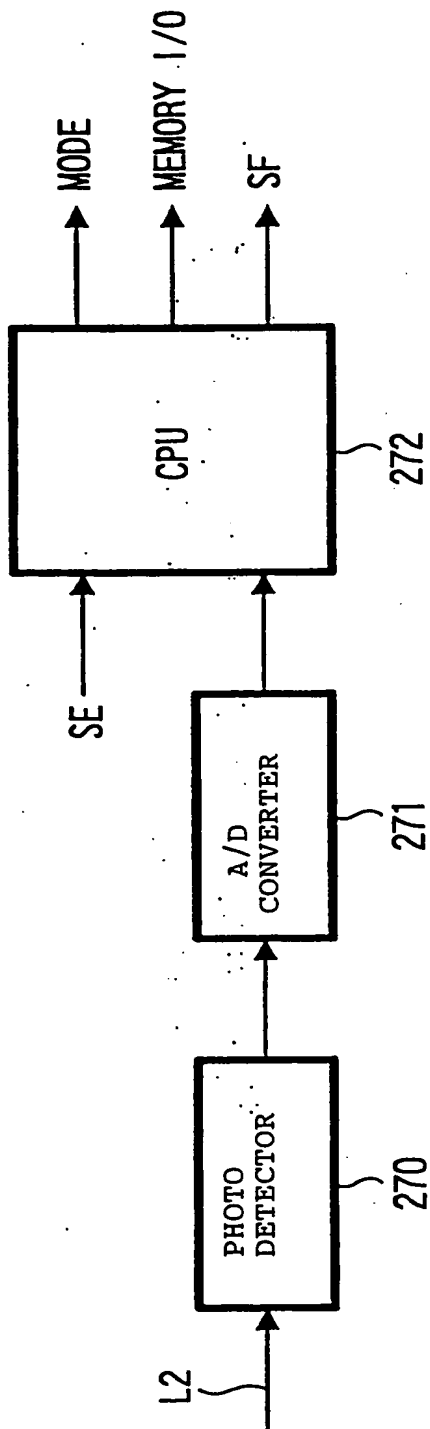


FIG. 26

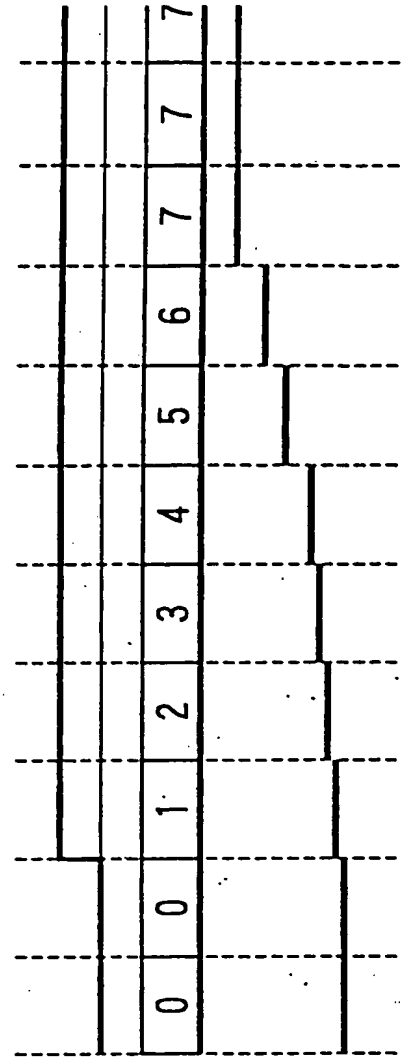


SECOND
INFORMATION SE

SF
STAIRCASE
SIGNAL

ENV
CONTROL
VOLTAGE

FIG. 27A



SECOND
INFORMATION SE

SF
STAIRCASE
SIGNAL

ENV
CONTROL
VOLTAGE

FIG. 27B

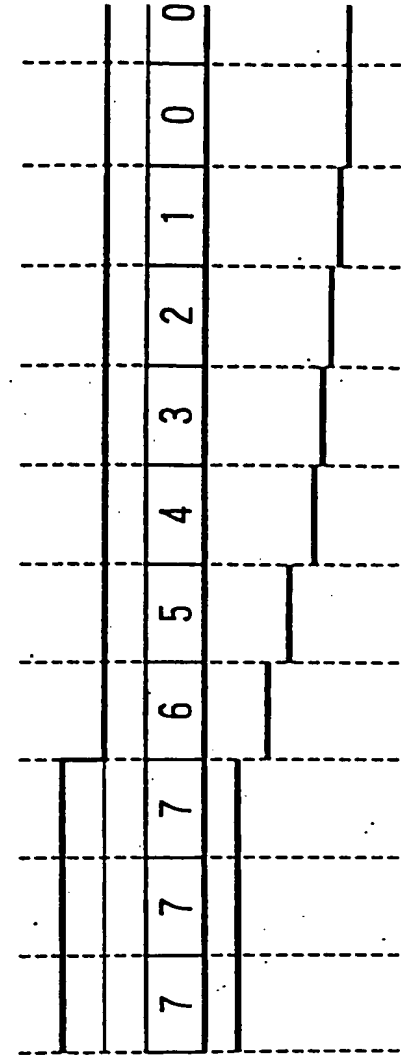


FIG. 28

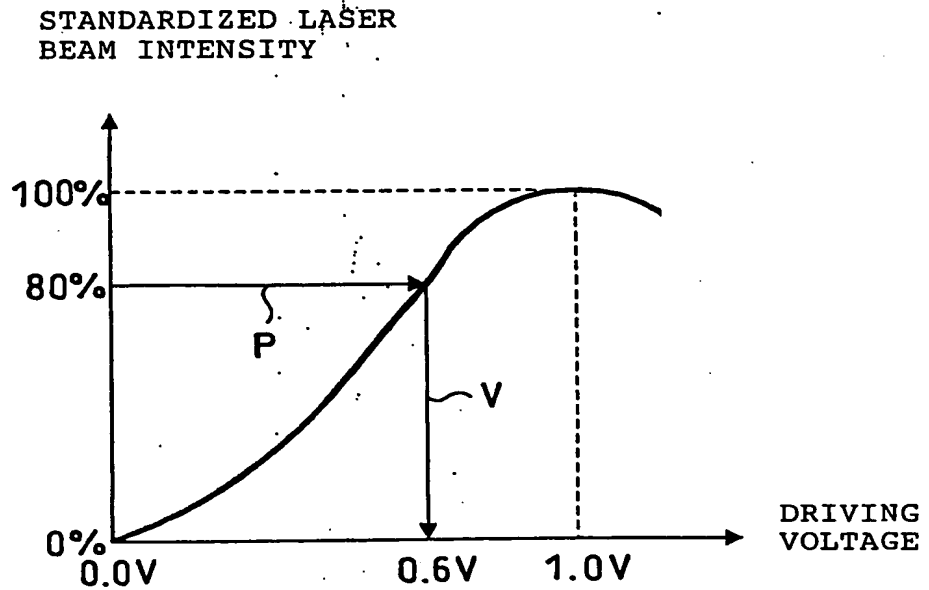


FIG. 29

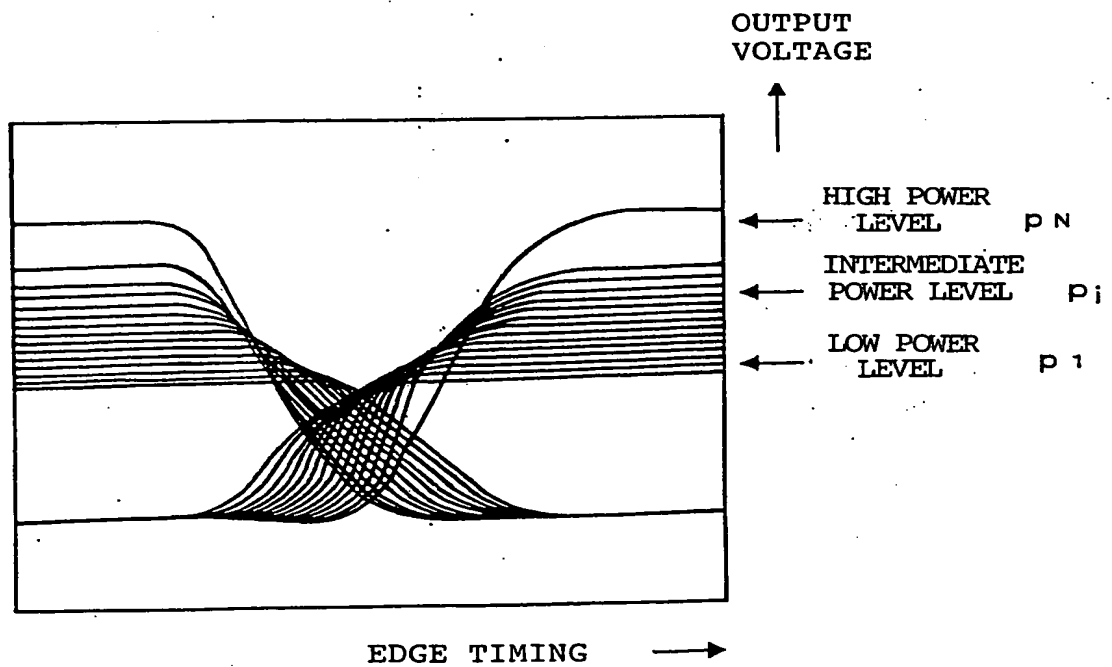


FIG. 30B

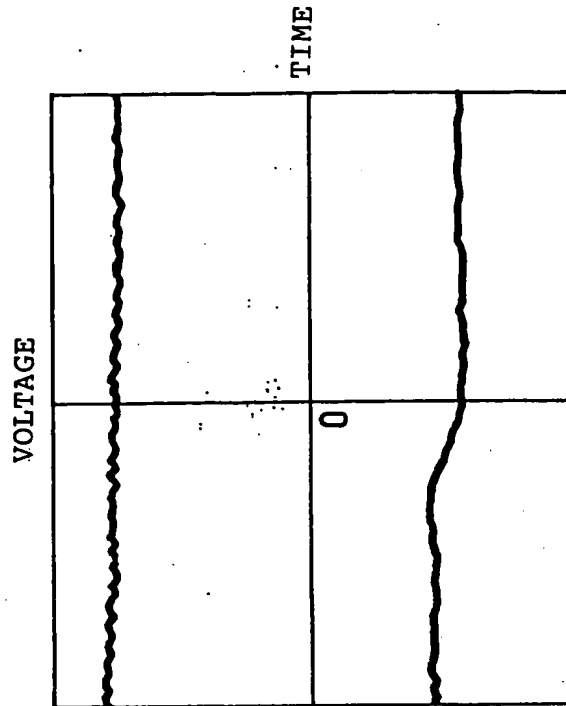


FIG. 30A

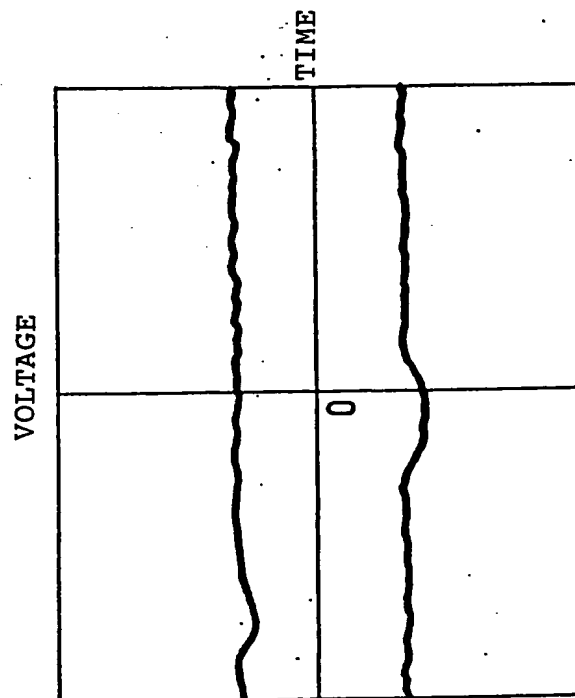


FIG. 31

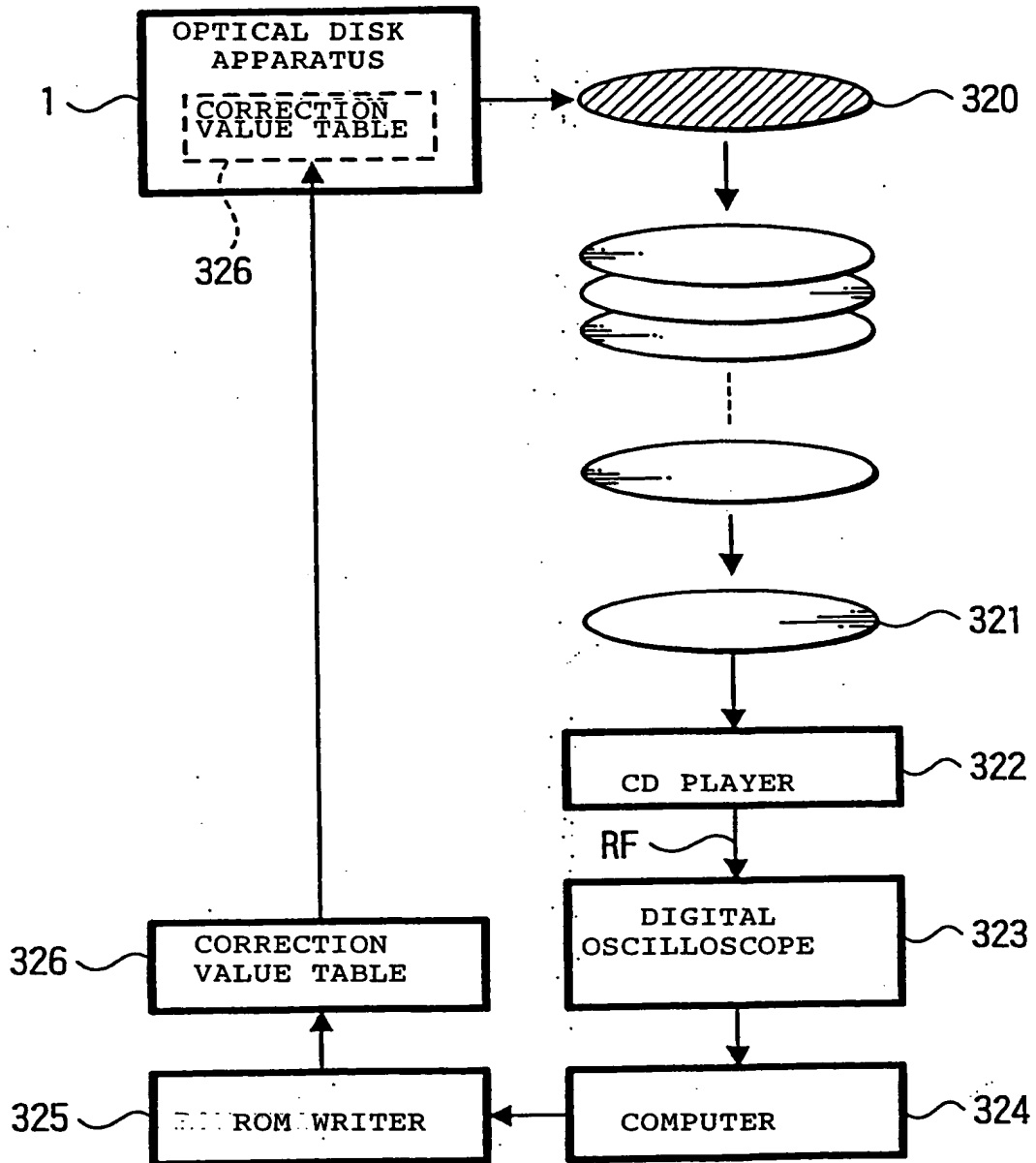
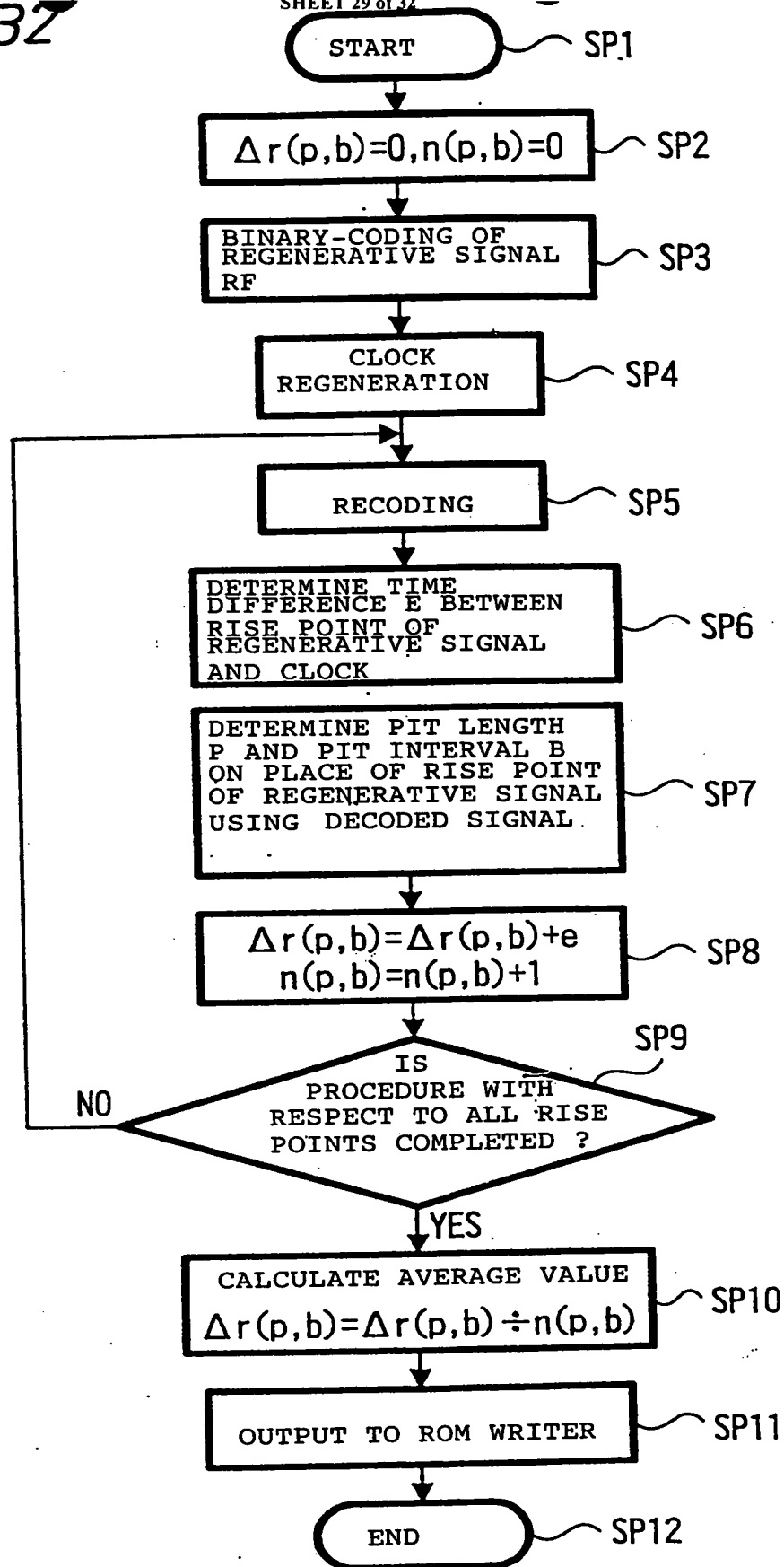


FIG. 32



DESCRIPTION OF REFERENCE NUMERALS

- 1 ... optical disk apparatus
- 2 ... disk master
- 3 ... digital audio tape recorder
- 4 ... modulator circuit
- 5 ... rectangular coordinate position detecting circuit
- 6 ... image (character) signal generating circuit
- 7A, 7B ... edge position correcting circuit
- 8 ... data selector
- 9 ... laser
- 10A, 10B ... optical modulator
- 11 ... mirror
- 12 ... objective lens
- 13 ... spindle servo circuit
- 14 ... spindle motor
- 20 ... one-rotation counter
- 21 ... track counter
- 22 ... coordinate transforming circuit
- 30 ... CPU
- 31, 32 ... input port
- 33, 34 ... output port
- 60A ... rise edge correcting circuit
- 60B ... fall edge correcting circuit
- 61 ... PLL (Phase Locked Loop)
- 62 ... flip-flop
- 70 ... latch circuit
- 71 ... correction value table

72 ... monostable multi-vibrator
73 ... selector
74 ... delay circuit
130 ... staircase waveform generating circuit
131 ... timing correcting circuit
132 ... voltage converting circuit
140 ... rise edge detecting circuit
141 ... fall edge detecting circuit
142 ... up/down counter
143 ... reference oscillator
W ... transition area of pit width of second information
170 ... ROM
171 ... D/A converter
180 ... second modulator circuit
190 ... PLL (Phase Locked Loop)
191 ... signal overlapping circuit
192 ... timing correcting circuit
200 ... latch circuit
201, 202, 203 ... AND gate
204 ... OR gate
205 ... NAND gate
206 ... AND gate
207 ... latch circuit
240 ... EFM signal generating circuit
242 ... modulator circuit
243 ... edge position correcting circuit
244 ... power modulator circuit

247 ... CPU
248 ... mastering table
261, 262 ... multiplexor
263 ... power level control table
264 ... D/A converter
265 ... analog multiplexor
270 ... photo detector
271 ... A/D converter
272 ... CPU
320 ... stamper
321 ... compact disk
322 ... CD player
323 ... digital oscilloscope
324 ... computer
325 ... ROM writer
326 ... correction value table